

CLAIMS

1. A method comprising:  
encrypting, based least in part upon at least one key, one or more respective portions of input data to generate one or more respective portions of output data to be stored in one or more locations in storage; and  
at least one of:  
generating, based at least in part upon the one or more respective portions of the output data, check data to be stored in the storage; and  
selecting the one or more locations so as to permit the one or more respective portions of the output data to be distributed among two or more storage devices comprised in the storage.
2. The method of claim 1, wherein:  
the storage comprises a redundant array of independent disks (RAID); and  
the check data comprises one of parity data and a copy of the output data.
3. The method of claim 1, further comprising:  
storing the at least one key in memory; and  
in response, at least in part, to an attempt to tamper with the at least one key, erasing the at least one key from the memory.
4. The method of claim 1, further comprising:

determining, based at least in part upon one or more credentials, whether to permit execution of one or more operations involving the storage.

5. A method comprising:

decrypting, based least in part upon at least one key, one or more respective portions of input data from one or more respective locations in storage to generate one or more respective portions of output data; and

at least one of:

generating check data to be stored in the storage, the check data being generated based at least in part upon the one or more respective portions of the input data; and

retrieving the one or more respective portions of the input data from a plurality of storage devices comprised in the storage.

6. The method of claim 5, further comprising:

receiving a request to retrieve requested data from the storage, the requested data comprising the output data; and

prior to the decrypting of the one or more respective portions of the input data, determining, based at least in part upon one or more credentials, whether the request is authorized.

7. The method of claim 6, further comprising:

generating, at least in part, the at least one key based at least in part upon at least one of one or more tokens and one or more passwords.

8. The method of claim 5, wherein:

the storage also stores metadata; and

the method further comprises encrypting the metadata based at least in part upon the at least one key.

9. The method of claim 8, wherein:

the metadata comprises partition information.

10. An apparatus comprising:

circuitry to encrypt, based least in part upon at least one key, one or more respective portions of input data to generate one or more respective portions of output data to be stored in one or more locations in storage;

the circuitry also being capable of at least one of:

generating, based at least in part upon the one or more respective portions of the output data, check data to be stored in the storage; and

selecting the one or more locations so as to permit the one or more respective portions of the output data to be distributed among two or more storage devices comprised in the storage.

11. The apparatus of claim 10, wherein:

the storage comprises a redundant array of independent disks (RAID); and  
the check data comprises one of parity data and a copy of the output data.

12. The apparatus of claim 10, wherein:

the circuitry is also capable of storing the at least one key in memory; and  
in response, at least in part, to an attempt to tamper with the at least one key,  
erasing the at least one key from the memory.

13. The apparatus of claim 10, wherein:

the circuitry is also capable of determining, based at least in part upon one or  
more credentials, whether to permit execution of one or more operations involving the  
storage.

14. An apparatus comprising:

circuitry to decrypt, based least in part upon at least one key, one or more  
respective portions of input data from storage to generate one or more respective portions  
of output data;

the circuitry being capable of at least one of:

generating check data to be stored in the storage, the check data being  
generated based at least in part upon the one or more respective portions of the  
input data; and

retrieving the one or more respective portions of the input data from a  
plurality of storage devices comprised in the storage.

15. The apparatus of claim 14, wherein the circuitry is also capable of:
- receiving a request to retrieve requested data from the storage, the
  - requested data comprising the output data; and
  - prior to the decrypting of the one or more respective portions of the input data, determining, based at least in part upon one or more credentials, whether the request is authorized.
16. The apparatus of claim 15, wherein:
- the circuitry is also capable of generating, at least in part, the at least one key based at least in part upon at least one of one or more tokens and one or more passwords.
17. The apparatus of claim 14, wherein:
- the storage also stores metadata; and
  - the circuitry is also capable of encrypting the metadata based at least in part upon the at least one key.
18. The apparatus of claim 17, wherein:
- the metadata comprises partition information.
19. An article comprising a storage medium having stored therein instructions that when executed by a machine result in the following:

encrypting, based least in part upon at least one key, one or more respective portions of input data to generate one or more respective portions of output data to be stored in one or more locations in storage; and

at least one of:

generating, based at least in part upon the one or more respective portions of the output data, check data to be stored in the storage; and

selecting the one or more locations so as to permit the one or more respective portions of the output data to be distributed among two or more storage devices comprised in the storage.

20. The article of claim 19, wherein:

the storage comprises a redundant array of independent disks (RAID); and

the check data comprises one of parity data and a copy of the output data.

21. The article of claim 19, wherein the instructions when executed by the machine also result in:

storing the at least one key in memory; and

in response, at least in part, to an attempt to tamper with the at least one key, erasing the at least one key from the memory.

22. The article of claim 19, wherein the instructions when executed by the machine also result in:

determining, based at least in part upon one or more credentials, whether to permit execution of one or more operations involving the storage.

23. An article comprising a storage medium having stored therein instructions that when executed by a machine result in the following:

- decrypting, based at least in part upon at least one key, one or more respective portions of input data from storage to generate one or more respective portions of output data; and

- at least one of:

- generating check data to be stored in the storage, the check data being generated based at least in part upon the one or more respective portions of the input data; and

- retrieving the one or more respective portions of the input data from a plurality of storage devices comprised in the storage.

24. The article of claim 23, wherein the instructions when executed by the machine also result in:

- receiving a request to retrieve requested data from the storage, the requested data comprising the output data; and

- prior to the decrypting of the one or more respective portions of the input data, determining, based at least in part upon one or more credentials, whether the request is authorized.

25. The article of claim 24, wherein the instructions when executed by the machine also result in:

generating, at least in part, the at least one key based at least in part upon at least one of one or more tokens and one or more passwords.

26. The article of claim 23, wherein:

the storage also stores metadata; and

the instructions when executed by the machine also result in encrypting the metadata based at least in part upon the at least one key.

27. The article of claim 26, wherein:

the metadata comprises partition information.

28. A system comprising:

a circuit board comprising a circuit card slot and a circuit card that is capable of being inserted into the circuit card slot, the circuit card comprising circuitry, the circuitry being capable of encrypting, based at least in part upon at least one key, one or more respective portions of input data to generate one or more respective portions of output data to be stored in one or more locations in storage;

the circuitry also being capable of at least one of:

generating, based at least in part upon the one or more respective portions of the output data, check data to be stored in the storage; and



selecting the one or more locations so as to permit the one or more respective portions of the output data to be distributed among two or more storage devices comprised in the storage.

29. The system of claim 28, wherein:

the circuitry comprises an input/output (I/O) processor, and non-volatile memory that is capable of storing the at least one key; and

the circuitry is capable of detecting an attempt to tamper with the at least one key, and in response, at least in part, to the attempt, erasing the at least one key from the memory.

30. The system of claim 29, wherein:

the circuit board also comprises a host processor coupled to the circuit card slot via a bus, and one or more token memories to store one or more tokens; and

additional circuitry to read one or more additional tokens stored in a removable token memory after the removable token memory is inserted into a token reader.

31. A system comprising:

a circuit board comprising a circuit card slot and a circuit card capable of being inserted into the circuit card slot, the circuit card comprising circuitry to decrypt, based least in part upon at least one key, one or more respective portions of input data from storage to generate one or more respective portions of output data;

the circuitry also being capable of at least one of:

generating check data to be stored in the storage, the check data being generated based at least in part upon the one or more respective portions of the input data; and

retrieving the one or more respective portions of the input data from a plurality of storage devices comprised in the storage.

32. The system of claim 31, further comprising:

an input/output (I/O) controller coupled to a redundant array of independent disks (RAID); and  
a bus via which the controller is coupled to the circuitry.

33. The system of claim 32, wherein:

the circuit board also comprises a host processor coupled to the slot and the controller.